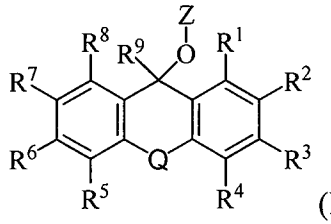
Listing of claims

1. (Currently amended) A compound of formula [[I]](I):



(I),

wherein:

R^1, R^3, R^4, R^5, R^6 and R^8 are each, independently, H, [[or]] alkyl or substituted alkyl;

R^2 and R^7 are each, independently, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl, substituted aryl, hydroxyl, chloro, ~~floro,~~ fluoro, iodo, cyano, azido, nitro, $-C(=O)O-R^{10}$, $-O-C(=O)-R^{10}$, $-C(=O)N(R^{10})R^{11}$, $-N(R^{10})C(=O)R^{11}$, $-N(R^{10})R^{11}$, $-O-R^{10}$[[,]] or $-S-R^{10}$;

~~or two or more groups R^1-R^8, together with the ring carbons to which they are attached, combine to form a cyclic moiety selected from substituted or unsubstituted alicyclic, substituted or unsubstituted heterocyclic, substituted or unsubstituted aromatic, or substituted or unsubstituted heteroaromatic;~~

R^9 is alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl or substituted aryl;

R^{10} is H or alkyl;

R^{11} is H or alkyl;

Z is a deoxy residue of a protected compound selected from a nucleoside, a nucleotide, a solid support-bound nucleotide, a nucleotide phosphoroamidite, an oligonucleotide, an oligonucleotide blockmer[[,]] or a solid support-bound oligonucleotide; and

Q is O[[,]] or S, ~~NR^{10}, $N(C=O)R^{10}$~~.

2. (Currently amended) ~~A~~ The compound of claim 1, wherein R^1, R^3, R^4, R^5, R^6 and R^8 are each H.

3. (Currently amended) ~~A~~ The compound of claim 2, wherein R^2 and R^7 are ~~selected from~~ each, independently, alkyl or substituted alkyl.

4. (Currently amended) ~~A~~ The compound of claim 1, wherein ~~any one of~~ the protected ~~compounds~~ compound comprises at least one modified sugar, a 2'-substituent [[,]] or a conjugate group.

5. (Currently amended) ~~A~~ The compound of claim 4, wherein the 2'-substituent is selected from fluoro, alkoxy, substituted alkoxyl[[,]] or OPR, wherein PR is a ~~2'-protecting~~ 2'-hydroxyl protecting group.

6. (Currently amended) ~~A~~ The compound of claim 5, wherein the 2'-substituent is selected from fluoro, OCH_3, $OCH_2CH_2OCH_3$[[,]] or $OCH_2CH_2ON(CH_3)_2$.

7. (Currently amended) ~~A~~ The compound of claim 5, wherein the 2'-substitutent is OPR.

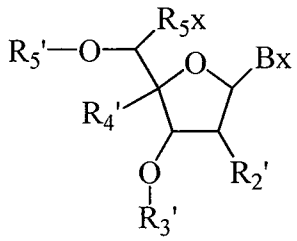
8. (Currently amended) ~~A~~ The compound of claim 7, wherein PR is selected from CPEP, ACE, TOM, TBDMS[[,]] or Fpmp.

9. (Currently amended) ~~A~~ The compound of claim 4, wherein the modified sugar is a locked nucleic acid[[,]] or a 4'-thio nucleic acid.

10. (Currently amended) ~~A~~ The compound of claim 4, wherein the protected compound comprises a conjugate group wherein the conjugate group comprises a lipophilic moiety.

11. (Currently amended) ~~A~~ The compound of claim 10, wherein the lipophilic moiety is selected from a cholesterol moiety or a polyethylene glycol moiety.

12. (Currently amended) A compound of formula (II):

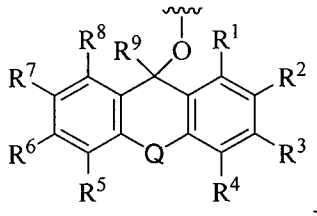


(II),

wherein:

Bx is an optionally protected heterocyclic base moiety;

one of R_3' [[or]]and R_5' is Px, wherein Px is a hydroxyl protecting group [[of]]having formula ~~I, according to claim 1,~~ (Ia):



(Ia),

wherein:

R^1, R^3, R^4, R^5, R^6 and R^8 are each, independently, H, alkyl or substituted alkyl;

R^2 and R^7 are each, independently, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl, substituted aryl, hydroxyl, chloro, fluoro, iodo, cyano, azido, nitro, -C(=O)O-R^{10}, -O-C(=O)-R^{10}, -C(=O)N(R^{10})R^{11}, -N(R^{10})C(=O)R^{11}, -N(R^{10})R^{11}, -O-R^{10} or -S-R^{10};

R^9 is alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl or substituted aryl;

R^{10} is H or alkyl;

R^{11} is H or alkyl; and

Q is O or S; and

the other of R_3' and R_5' is selected from:

-P(Pg)(Pn), where Pg is a phosphorus protecting group and Pn is -N(R_{N1})(R_{N2}), wherein each of R_{N1} and R_{N2} is independently selected from hydrogen, substituted or unsubstituted aliphatic, substituted or unsubstituted alicyclic, substituted or unsubstituted aromatic, or substituted or unsubstituted heteroaromatic, or R_{N1} and R_{N2} are taken

together with the nitrogen atom to which they are attached to form a cyclic moiety selected from substituted or unsubstituted heterocyclic;

-L-ss, where L is a linking moiety and ss is a solid support;

an H-phosphonate moiety;

or a nucleic acid moiety selected from a nucleoside, a nucleotide, a solid support-bound nucleotide, a nucleotide phosphoroamidite, an oligonucleotide, an oligonucleotide blockmer[[,]] or a solid support-bound oligonucleotide;

R_2' is ~~independently selected from~~ OH, alkoxy, substituted alkoxy, halogen[[,]] or OPR, where PR is a ~~2'-protecting~~ 2'-hydroxyl protecting group, or R_2' is a nucleic acid moiety selected from a nucleoside, a nucleotide, a solid support-bound nucleotide, a nucleotide phosphoroamidite, an oligonucleotide, an oligonucleotide blockmer[[,]] or a solid support-bound oligonucleotide;

R_4' is H or R_4' and R_2' are taken together to be $-(CH_2)_n-Y-$, where n is 1 or 2 and Y is selected from -O-, -S-[[,]] or -N(RN3)-, wherein RN3 is selected from H or substituted or unsubstituted aliphatic; and

[[R_5']] R_{5x} is selected from H or substituted or unsubstituted alkyl.

13. (Currently amended) ~~A~~ The compound of claim 12, wherein R_5' is Px and R_3' is -P(Pg)(Pn).

14. (Currently amended) ~~A~~ The compound of claim 13, wherein Pg is $-O(CH_2)_2CN$ and Pn is $-N(CH(CH_3)_2)_2$.

15. (Currently amended) ~~A~~ The compound of claim 12, wherein R_2' is OPR.

16. (Currently amended) ~~A~~ The compound of claim 15, wherein PR is selected from Px, CPEP, ACE, TOM, TBDMS[[,]] or Fpmp.

17. (Currently amended) ~~A~~ The compound of claim 13, wherein Pn is $-N(CH_2CH_3)_2$.

18. (Currently amended) ~~A~~ The compound of claim 17, wherein R_2' is OPR.

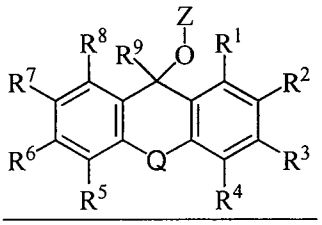
19. (Currently amended) ~~A~~ The compound of claim 18, wherein PR is CPEP.

20. (Currently amended) ~~A~~ The compound of claim 12, wherein R_5' is Px and R_3' is a nucleic acid moiety selected from a nucleoside, a nucleotide, a solid support-bound nucleotide, a nucleotide phosphoroamidite, an oligonucleotide, an oligonucleotide blockmer[[,]] or a solid support-bound oligonucleotide.

21. (Currently amended) ~~A~~ The compound of claim 12, wherein R_3' is Px and R_5' is a nucleic acid moiety selected from a nucleoside, a nucleotide, a solid support-bound nucleotide, a nucleotide phosphoroamidite, an oligonucleotide, an oligonucleotide blockmer[[,]] or a solid support-bound oligonucleotide.

22. (Currently amended) ~~A~~ The compound of any one of claims 20 or 21, wherein ~~any one of~~ said nucleic acid ~~moieties~~ moiety comprises [[a]] one or more modified ~~sugar~~ sugars, ~~a 2'-substituent,~~ one or more 2'-substituted sugars or a conjugate group.

23. (Currently amended) A method of synthesizing ~~compounds~~ a compound of formula [[I,]](I):

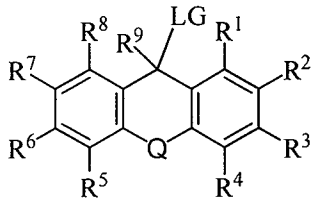


(I),

~~according to claim 1,~~ comprising the steps of:

providing a ~~free hydroxyl of a~~ compound having a free hydroxyl group, said compound selected from a nucleoside, a nucleotide, a nucleotide phosphoramidite, an oligonucleotide, an oligonucleotide blockmer or a solid support-bound oligonucleotide; and

reacting said free hydroxyl group ~~compound~~ with a protecting group of formula (III):



(III),

wherein:

R^1, R^3, R^4, R^5, R^6 and R^8 are each, independently, H, [[or]] alkyl or substituted alkyl;

R^2 and R^7 are each, independently, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl, substituted aryl, hydroxyl, chloro, ~~floro,~~ fluoro, iodo, cyano, azido, nitro, $-C(=O)O-R^{10}$, $-O-C(=O)-R^{10}$, $-C(=O)N(R^{10})R^{11}$, $-N(R^{10})C(=O)R^{11}$, $-N(R^{10})R^{11}$, $-O-R^{10}$[[,]] or $-S-R^{10}$;

~~or two or more groups R^1-R^8, together with the ring carbons to which they are bonded, combine to form a cyclic moiety selected from substituted or unsubstituted alicyclic, substituted or unsubstituted heterocyclic, substituted or unsubstituted aromatic, or substituted or unsubstituted heteroaromatic;~~

R^9 is alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl or substituted aryl;

R^{10} is H or alkyl;

R^{11} is H or alkyl;

LG is a leaving group; [[and]]

Q is O[[,]] or S~~, NR^{10}, $N(C=O)R^{10}$~~.; and

Z is a deoxy residue of a protected compound selected from a nucleoside, a nucleotide, a solid support-bound nucleotide, a nucleotide phosphoroamidite, an oligonucleotide, an oligonucleotide blockmer or a solid support-bound oligonucleotide.

24. (Original) The method of claim 23, wherein the leaving group is chloro.

25. (Original) The method of claim 23, wherein R^1, R^3, R^4, R^5, R^6 and R^8 are each H.